Hitachi Data Ingestor

Maintenance Manual

REV.12c

Read this manual carefully and keep it.

- **Before starting operation, read the safety instructions carefully and fully understand them.**
- **After reading this manual, keep it at hand for your reference.**

HITACHI

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GENE 00-0000-12c

Preface

This manual describes information on overall maintenance works of the node of Hitachi Data Ingestor (HDI) such as outline, structure, installation, and actions against failures.

When performing a maintenance work, read this manual carefully, and fully understand the operation procedure and instructions before starting the work.

This manual was carefully prepared and reviewed for completeness and correctness. However, please feel free to contact us concerning any question, mistake, omission, or any other issues about this manual.

Cautionary Notes

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- This manual may be revised without prior notice.
- Applicable version of this manual
  The applicable version of this manual is 2.1.1-XX, 2.2.1-XX, 3.0.0-XX, 3.0.1-XX, 3.1.0-XX, 3.1.1-XX, 3.2.0-XX, 3.2.1-XX, 3.2.2-XX, 3.2.3-XX, 4.0.0-XX, 4.0.1-XX, 4.1.0-XX, 4.1.1-XX, 4.1.2-XX, 4.2.0-XX, 4.2.1-XX, 4.2.2-XX, 4.2.3-XX, 5.0.0-XX, 5.0.2-XX, 5.1.0-XX, 5.1.1-XX, 5.2.0-XX, 5.2.1-XX, 5.2.2-XX, 5.3.0-XX, 5.3.1-XX, 6.0.0-XX, 6.0.1-XX, 6.0.3-XX, 6.1.0-XX, 6.1.1-XX, 6.1.2-XX1, 6.2.0-XX, 6.3.1-XX, 6.4.2-XX and 6.4.4-XX of Hitachi Data Ingestor of Comments are described where there are functional differences depending on the version.
  Note that the notations for the versions have changed from 3.2.0-XX. Refer to “Table 3 Notation Conversion List between the OS Versions” (GENE 00-0030).
- Applicable models of this manual are “Dell™ PowerEdge™ R710”, “HA8000 RS220xK”, “CR210HM”, “CR220SM”, and “D51B-2U”.
  The manuals are divided in each subject model. Therefore, verify the model that target to be maintained beforehand, and then read the appropriate manual.

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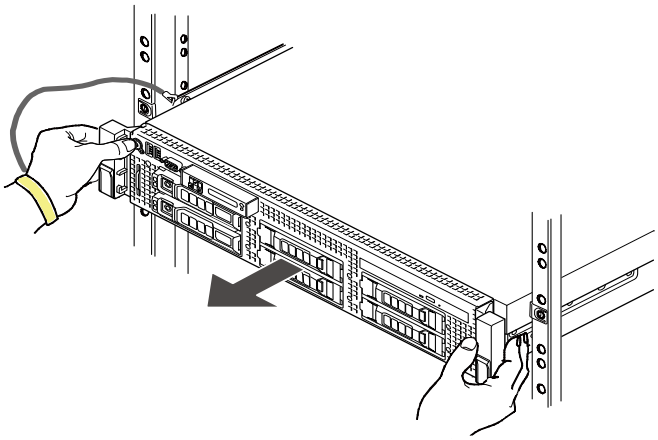
General Cautionary Notes

- It is feared that user data is lost unless the power is turned off correctly following the specified procedure.

- In order to protect parts from the electrostatic discharge, every worker must put a wrist strap on his/her wrist before starting installation or maintenance work and start the work after connecting the grounding clip to the metallic portion of the frame (the wrist strap must be put on when connecting the LAN cable).
- Do the work with the wrist strap put on. Do not put off the wrist strap till the work is finished.
- When handling a part, hold it in the way that fingertips of the hand putting the wrist strap on touches the metallic portion of the part (it is necessary in order to discharge the charged static electricity and prevent a charge caused by handling).
- Be sure to touch the subsystem with the wrist strap put on. If you touch the subsystem without putting on the wrist strap, the static electricity charged on your body flows to the subsystem in an instant because no resistance exists between your body and the subsystem causing a subsystem trouble.



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Hardware model name

"Maintenance Manual Hitachi Compute Rack Series" is referred to with this manual in operation for the hardware of the node. At the time of the reference, please be careful about the distinction of the hardware model.

Table Hardware model name

#	Product Name	Hardware model name	
		CR210HM Quanta Grid D51B-2U	CR220SM Quanta Grid D51B-2U
1	Hitachi Data Ingestor	HDI Cluster	HDI Single

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Model Name Conversion

Table 1 Notations of Devices Used in This Manual

Item no.	Notation in this manual	Device type/Series type	Product name
1	AMS2500	DF800-RKH	Hitachi Adaptable Modular Storage 2500
		DF800-RKEH	
2	AMS2300	DF800-RKM	Hitachi Adaptable Modular Storage 2300
		DF800-RKEM	
3	AMS2100	DF800-RKS	Hitachi Adaptable Modular Storage 2100
		DF800-RKES	
4	MSS (*1)	DF800-RKEXS	Modular Storage System
5	HUS150	DF850-CBL	Hitachi Unified Storage 150
6	HUS130	DF850-CBSL/CBSS	Hitachi Unified Storage 130
7	HUS110	DF850-CBXSL/ CBXSS	Hitachi Unified Storage 110
8	USP V	DKC610I / RAID600	Hitachi Universal Storage Platform V
9	USP VM		Hitachi Universal Storage Platform VM
10	VSP	DKC710I / RAID700	Hitachi Virtual Storage Platform
11	VSP G1000	DKC810I / RAID800	Hitachi Virtual Storage Platform G1000
12	HUS VM	DW700	Hitachi Unified Storage VM
13	VSP G800(*2)	DW800-CBLH	Hitachi Virtual Storage Platform G800
14	VSP G600(*2)	DW800-CBLM3	Hitachi Virtual Storage Platform G600
15	VSP G400(*2)	DW800-CBLM2	Hitachi Virtual Storage Platform G400
16	VSP G200(*2)	DW800-CBSS1/CBSL1	Hitachi Virtual Storage Platform G200
17	VSP G900(*2)	DW850-CBLH2	Hitachi Virtual Storage Platform G900
18	VSP G700(*2)	DW850-CBLH1	Hitachi Virtual Storage Platform G700
19	VSP G370(*2)	DW850-CBSS2/CBSL2	Hitachi Virtual Storage Platform G370
20	VSP G350(*2)	DW850-CBSS1/CBSL1	Hitachi Virtual Storage Platform G350
21	VSP F800(*3)	Set of DW800-CBLH and DW-F800-DBF/DBS/DBSC	Hitachi Virtual Storage Platform F800
22	VSP F600(*3)	Set of DW800-CBLM3 and DW-F800-DBF/DBS/DBSC	Hitachi Virtual Storage Platform F600
23	VSP F400(*3)	Set of DW800-CBLM2 and DW-F800-DBF/DBS/DBSC	Hitachi Virtual Storage Platform F400
24	VSP F900(*3)	Set of DW850-CBLH2 and DW-F800-DBF/DBSC	Hitachi Virtual Storage Platform F900
25	VSP F700(*3)	Set of DW850-CBLH1 and DW-F800-DBF/DBSC	Hitachi Virtual Storage Platform F700
26	VSP F370(*3)	Set of DW850-CBSS2/CBSL2 and DW-F800-DBSC	Hitachi Virtual Storage Platform F370
27	VSP F350(*3)	Set of DW850-CBSS1/CBSL1 and DW-F800-DBSC	Hitachi Virtual Storage Platform F350

*1: This name is changed by the sales channels. Read MSS as the relevant name according to the sales channel.
*2: From #13 to #20 are comprehensively noted as VSP Gx00 in this manual.
*3: From #21 to #27 are comprehensively noted as VSP Fx00 in this manual.

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Basically terms in this manual are standard terms for compatibility with maintenance manuals of other products, but some parts use terms of other products. In such cases, consider the relevant terms as standard terms shown in Table 2.

Table 2 Correspondence between terms

No.	Terms of other products	Standard terms
1	Disc Array Subsystem, Array Device	Array
2	RAID Group	Parity Group
3	LU, LUN, LDEV, Logical Unit Number	Volume

The notations used in this manual are different between the OS versions 3.1.1-XX or earlier and 3.2.0-XX or later. The conversion list is shown below.

Table 3 Notation Conversion List between the OS Versions

Item no.	Notation in the OS version 3.2.0-XX or later	Notation in the OS version 3.1.1-XX or earlier
1	Virtual IP Address	Service IP Address
2	Notation of the version ex. 3.2.0-00, 3.2.0-XX	Notation of the version ex. 03-01-00-00-00, 03-01-00-XX

Detailed description of the conversion of the OS versions is as follows.

The notation “A.B.C-XX” is equivalent to “0A-0B-0C-XX”.

Note that the OS versions are displayed as “0A-0B-0C-XX” on 3.1.1-XX or earlier versions, but the notation of the OS version in the manual is “A.B.C-XX”.

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Reference Place in User's Guide for Operating Procedures

When you ask a system administrator to perform an operation, you can use the following tables to tell him/her the reference place in the manual where the operating procedure is described.

Table 4 shows reference places in User's Guide in the case of the cluster configuration, Table 5 shows reference places in User's Guide in the case of the single node configuration, and Table 6 shows reference places in User's Guide for commands.

Also, for the manual name to be referenced, replace with as follows.

- If the OS version is 4.0.1-XX , replace "User's Guide" stated in Table 4 and Table 5 as the reference place with "Administrator's Guide".
- If the OS version is 4.0.1-XX or later, replace "User's Guide" stated in Table 4, Table 5 and Table 6 as the reference place with "Administrator's Guide".

Table 4 Reference Place in User's Guide for Operating Procedures in the case of Cluster Configuration (1/2)

Operation	3.1.1-XX or earlier	3.2.0-XX	3.2.1-XX or later
Registering a processing node	User's Guide 'Registering a processing node'	[Operation]-[Managing processing nodes] in table A-1 of User's Guide "A. Operations provided by the GUI"	[Operation target]-[Processing Node] in table A-1 of User's Guide "A. Operations provided by the GUI"
Refreshing processing node information	User's Guide 'Refreshing processing node information'		
Rebooting OS	User's Guide 'Starting a processing node' and 'Stopping a processing node'		[Operation target]-[Cluster, nodes, and resource groups] in table A-1 of User's Guide "A. Operations provided by the GUI"
Managing clusters	User's Guide 'Managing Clusters'	[Operation]-[Managing clusters] in table A-1 of User's Guide "A. Operations provided by the GUI"	
Defining a cluster configuration	User's Guide 'Defining a cluster configuration'		
Stopping and starting a cluster	User's Guide 'Stopping and starting a cluster'		
Stopping and starting a node	User's Guide 'Stopping and starting a node'		
Stopping and starting a resource group	User's Guide 'Stopping and starting a resource group'		
Performing a forced stop for a resource group	User's Guide 'Performing a forced stop for a resource group'		
Changing the execution node of a resource group	User's Guide 'Changing the execution node of a resource group'		
Stopping and starting a virtual server	—	—	[Operation target]-[Virtual servers] in table A-1 of User's Guide "A. Operations provided by the GUI"
Changing the execution node of a virtual server	—	—	
Creating a file system	User's Guide 'Creating a file system'	[Operation]-[Managing file systems] in table A-1 of User's Guide "A. Operations provided by the GUI"	[Operation target]-[File systems] in table A-1 of User's Guide "A. Operations provided by the GUI"
Deleting a file system	User's Guide 'Deleting a file system'		

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Table 4 Reference Place in User's Guide for Operating Procedures in the case of Cluster Configuration (2/2)

Operation	3.1.1-XX or earlier	3.2.0-XX	3.2.1-XX or later
Performing a backup of OS Disk/cluster management LU	User's Guide 'Collecting System Configuration Information'	[Operation]-[Collecting system configuration information] in table A-1 of User's Guide "A. Operations provided by the GUI"	[Operation target]-[System configuration] in table A-1 of User's Guide "A. Operations provided by the GUI"
Acquiring a system configuration file	User's Guide 'Downloading and uploading a system configuration file'		
Uploading a system configuration file	User's Guide 'Uploading a system configuration file'		
Collecting /deleting core files and log files	User's Guide 'Managing Node Error Information'	[Operation]-[Managing node error information] in table A-1 of User's Guide "A. Operations provided by the GUI"	[Operation target]-[Error information] in table A-1 of User's Guide "A. Operations provided by the GUI"
Downloading a dump file	User's Guide 'Downloading a core file or a dump file'		
Deleting log files	User's Guide 'Deleting log files in a batch operation'		
Deleting core files	User's Guide 'Deleting core and dump files in a batch operation'		
Managing File Shares	User's Guide 'Managing File Shares'	[Operation]-[Managing file shares] in table A-1 of User's Guide "A. Operations provided by the GUI"	[Operation target]-[File shares] in table A-1 of User's Guide "A. Operations provided by the GUI"
Adding a file share	User's Guide 'Adding a file share'		
Setting migration policies	User's Guide 'Procedure for setting migration policies'	[Operation]-[Managing migration] in table A-1 of User's Guide "A. Operations provided by the GUI"	[Operation target]-[Migration] in table A-1 of User's Guide "A. Operations provided by the GUI"
Registering a public key	User's Guide 'Registering a public key'	[Operation]-[Managing services] in table A-1 of User's Guide "A. Operations provided by the GUI"	[Operation target]-[Services] in table A-1 of User's Guide "A. Operations provided by the GUI"
Creating a cluster	User's Guide 'Setup Using the Configuration Wizard'	User's Guide 'Configuration Wizard'	User's Guide 'Configuration Wizard'
Troubleshooting	User's Guide 'Troubleshooting'	Troubleshooting Guide	Troubleshooting Guide
Acquiring failure information	User's Guide 'Collecting data and contacting maintenance personnel'	Troubleshooting Guide 'Collecting Data and Contacting Maintenance Personal'	Troubleshooting Guide 'Collecting Data and Contacting Maintenance Personal
Recovering a virtual server OS LU	—	—	Troubleshooting Guide 'When an error occurs in a virtual server OS LU'
Increasing free space in a differential-data storage device	User's Guide 'A differential-data storage device runs out of space (when status is Blocked)'	Troubleshooting Guide 'A differential-data storage device runs out of space (when status is Blocked)'	Troubleshooting Guide 'A differential-data storage device runs out of space (when status is Blocked)'

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Table 5 Reference Place in User's Guide for Operating Procedures in the case of Single Node Configuration

Operation	3.1.1-XX or earlier	3.2.0-XX or later
Collecting/deleting core files and log files	User's Guide for Single Node Configuration 'Checking messages and logs'	[Operation target]-[Managing Node Error Information] in table A-1 of User's Guide "A. Operations provided by the GUI"
Deleting log files	User's Guide for Single Node Configuration 'Deleting log files in a batch operation'	
Deleting core files	User's Guide for Single Node Configuration 'Deleting all core and dump files in a batch operation'	
Uploading a system configuration file	User's Guide for Single Node Configuration 'Uploading a system configuration file'	[Operation target]-[Collecting system configuration information] in table A-1 of User's Guide "A. Operations provided by the GUI"
Setting Up	User's Guide for Single Node Configuration 'Setting Up'	Getting Started Guide for Single Node Configuration 'Setting Up'

Table 6 Reference Place in User's Guide for Commands

Commands	User's Guide
arcrestore	CLI User's Guide 'arcrestore (Restore a file system whose data has been migrated to the HCP system)'
cifsbackup	CLI User's Guide 'cifsbackup (Back up CIFS share information)'
fslist	CLI User's Guide 'fslist (List file system information)'
hcporphanrestore	CLI User's Guide 'hcporphanrestore (Check the integrity of and recover the files in both the HDI and HCP systems)'
hcprecoverkey (*1)	CLI User's Guide 'hcprecoverkey (Restoring the common key used for encryption of data stored on an HCP system)'
nfsbackup	CLI User's Guide 'nfsbackup (Back up NFS share information)'
pmctl	CLI User's Guide 'pmctl (Manage private maintenance port interfaces)'
rmfile	CLI User's Guide 'rmfile (Delete a file stored in the home directory)'
syslurestore	CLI User's Guide 'syslurestore (Restore system LUs)'

*1: It is supported by the OS version 5.2.0-XX or later.

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Manual Composition

This Maintenance Manual is composed of 9 volumes, that is, Maintenance Manuals for Safety Summary, Theory, Installation, Set Up, Disk Setting, Addition/Subtraction/Relocation, Maintenance Tool, Troubleshooting, and Replacement.
For the composition of the each volume, refer to the following.

Maintenance Manual - for Safety Summary :

This “Safety Summary” volume describes the precautions to execute the maintenance work safely.

⚠ SAFETY SUMMARY ..... SAFE 01-0000

Maintenance Manual - for Theory :

This “Theory” volume describes the outline of the subsystem, and the configuration, etc.

Chapter 1 (This chapter is blank in HDS version) ..... THEO 01-0000
Chapter 2 Overview of the Subsystem ..... THEO 02-0000
Chapter 3 Description of Operations ..... THEO 03-0000
Chapter 4 Maintenance Actions ..... THEO 04-0000
Chapter 5 LAN Configuration Settings ..... THEO 05-0000

Maintenance Manual - for Installation :

This “Installation” volume describes the setting of the subsystem and the installation of the parts, etc.

Chapter 1 Installing Hitachi Data Ingestor ..... INST 01-0000
Chapter 2 Procedure for Turning on and off the Power ..... INST 02-0000
Chapter 3 Setting the Tape Library ..... INST 03-0000
Chapter 4 Overview of VLAN Setting Procedure for the Management LAN IP-SW ..... INST 04-0000

Maintenance Manual - for Set Up :

This “Set Up” volume describes the installation of OS, etc.

Chapter 1 Before Executing Setup Operation ..... SETUP 01-0000
Chapter 2 Overview of Installing OS ..... SETUP 02-0000
Chapter 3 New Installation ..... SETUP 03-0000
Chapter 4 Update Installation ..... SETUP 04-0000
Chapter 5 Setting/Confirmation after Installation ..... SETUP 05-0000
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Chapter 7 BIOS and Various Types of Firmware Update Procedure ..... SETUP 07-0000
Chapter 8 BMC Setting ..... SETUP 08-0000
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Maintenance Manual - for Disk Setting :

This “Disk Setting” volume describes the setting of the disk array device to be connected to the node, etc.

Chapter 1 Overview of Disk Settings ..... DSKST 01-0000

Chapter 2 Disk Setting for AMS2000 Series, MSS, and HUS100 Series... DSKST 02-0000

Chapter 3 Chapter 3 Disk Setting for USP V, USP VM, VSP, VSP G1000, VSP Gx00/VSP Fx00 and HUS VM ..... DSKST 03-0000

Chapter 4 Disk Array Subsystem Connection Specifications for Each Model ..... DSKST 04-0000

Maintenance Manual - for Addition, Subtraction and Relocation :

This “Addition/Subtraction/Relocation” volume describes the addition, subtraction and relocation related to the setting of the subsystem.

Chapter 1 Adding Optional Components .....ADD 01-0000

Chapter 2 Subtracting Optional Components .....ADD 02-0000

Chapter 3 Appendix A Replacing two nodes of the cluster configuration with the new nodes.....ADD 03-0000

Maintenance Manual - for Maintenance Tool :

This “Maintenance Tool” volume describes the maintenance tools to be used at the maintenance operations.

Chapter 1 Overview of Maintenance Using Maintenance Tool ..... MNTT 01-0000

Chapter 2 Details of Maintenance Tools ..... MNTT 02-0000

Chapter 3 Appendix A Cluster Operation by the Maintenance Personnel ... MNTT 03-0000

Chapter 4 Appendix B Confirmation of Management-Related Network Communication by the Maintenance Personnel ..... MNTT 04-0000

Maintenance Manual - for Troubleshooting :

This “Troubleshooting” volume describes the trouble analysis of the subsystem, etc.

Chapter 1 Method of Local Initial Measures According to Maintenance Request ..... TRBL 01-0000

Chapter 2 Troubleshooting Flowchart..... TRBL 02-0000

Chapter 3 Maintenance Procedure of Power Supply Failures ..... TRBL 03-0000

Chapter 4 Determination of Management Network Failure ..... TRBL 04-0000

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Chapter 7 Failure Monitoring by SNMP ..... TRBL 07-0000

Chapter 8 Messages..... TRBL 08-0000

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Maintenance Manual - for Replacement :

This “Replacement” volume describes the replacement work of each part.

Chapter 1 Replacing the Components of Hitachi Data Ingestor.....REP 01-0000

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For Configuration :

This “For Configuration” volume describes the product names, configurations, and racking of the subject models.

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For Setting / Display :

This “For Setting / Display” volume describes the connection/confirmation for the OS console of the target models, BIOS settings, and RAID controller settings.

B.1 Connection and Confirmation of OS Console .....STDP 01-0000

B.2 BIOS Setting.....STDP 02-0000

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For Platform Specified Troubleshooting :

This “For Platform Specified Troubleshooting” volume describes the analyses of troubles on the subject models.

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This “For Platform Specified Replace” volume describes the replacing operation of each part on the subject models.

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[Installation]

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